Grant Agreement number: LIFE21-CET-LOCAL-CEESEU-DIGIT/101077297

CEESEU-DIGIT

Central and Eastern Europe Sustainable Energy Union's Design and Implementation of regional Government Initiatives for a just energy Transition

ECAP+ (draft of the new approach to the regional-level Energy and Climate Plan document)

The project is financed by the European Union's LIFE programme. Administration number: LIFE21-CET-LOCAL-CEESEU-DIGIT/101077297. Project acronym: LIFE21-CET-LOCAL-CEESEU-DIGIT.

Table of contents

1. Introduction

1.1. CEESEU-DIGIT project description and objectives

CEESEU-DIGIT project (**C**entral and **E**astern **E**urope **S**ustainable **E**nergy **U**nion's **D**esign and **I**mplementation of regional **G**overnment **I**nitiatives for a just energy **T**ransition), launched in December 2022, aims to support local and regional authorities in the preparation of a new type of regional Energy and Climate Plans (ECAP+) in six Central and Eastern European carbon-intensive target areas (regions within CEE countries: Croatia, Czech, Estonia, Latvia, Poland, Slovenia) and with the cooperation of the Hungarian partner. What is more, this project builds capacity of local and regional authorities in all the aspects covered in ECAP+, provides the documents' alignment with national and European Union 2050 goals related to carbon neutrality, creates a methodology whereby climate adaptation, social and landscape use aspects are equally valid in these documents in addition to mitigation measures.

Project coordinator: University of Tartu (UTARTU)
Partner organizations:

- Climate Alliance,
- ENVIROS Czech Republic,
- Local Energy Agency Spodnje Podravje (LEASP),
- Mazovian Energy Agency (MAE),
- Medjimurje Energy Agency (MENEA),
- Society for Sustainable Development Design (DOOR),
- Tartu Regional Energy Agency (TREA),
- Vidzeme Planning Region (VPR),
- WWF Hungary.

Project duration: December 2022 – November 2024.

Figure 1. CEESEN logo.

The CEESEU-DIGIT promotes the vision of **CEESEN (The Central and Eastern European Sustainable Energy Network)**; which is an NGO that aims to guide the CEE on sustainable energy and climate action in accordance with EU 2050 climate neutrality goals; coordinate cooperation and interaction between local public administrators, stakeholders and policy makers so that policies and initiatives undertaken by the EU and other entities adequately address the interests of the region to effectively plan, finance, implement and maintain sustainable and just energy initiatives.

Figure 2. Model of CEESEN influence.

1.2. ECAP+ aims and objectives

Main goals of the development of **a new type of uniform, holistic, cross-sector Energy and Climate Plans** (ECAP+) for regional implementation are:

- promoting a just energy transition,
- placing great emphasis on adaptation and landscape-level planning compared to the already existing energy and climate plans with particular regard to vulnerable/marginalized social groups and energy poverty, as well as the social aspects of climate sensitivity and climate protection goals,
- ensuring alignment with EU 2050 goals related to carbon neutrality,
- preparing these documents in coordination with the goals set in the National Energy and Climate Plans at the national level,
- increasing financial support and planning for just energy transition.

1.3. Aims towards just transition

A new approach to ECAP+ document created within the CEESEU-DIGIT project put a special attention to the aspects of just transition that are described below.

1.3.1. Definition of just energy transition

A just energy transition entails transforming the economy and economic system in a way that is as fair and inclusive as possible to ensure the creation of

respectable employment prospects for all stakeholders involved and leaving no one behind with the respect of the low-carbon transition.

Just Energy Transition aligns with the Sustainable Development Goals (SDGs). The transformation of the world's energy systems will boost gender equality, offer new jobs, and empower individuals, groups, and societies. A just and inclusive energy transition, based on the idea of "leaving no one behind," will improve human well-being, health, and capabilities, strengthen resilience, promote innovation towards a sustainable society at all levels, and encourage significant investments.

According to United Nations' "Theme report on Enabling SDGs through inclusive, just energy transitions: Towards the achievement of SDG 7 and net-zero emissions" Energy for SDG Impact Framework contains of goals listed below. It is needed that all the countries use this SDG framework to access the sustainable energy, and the other way, that the energy transition could be enable obtain these SDGs.

Figure 3. Energy for SDG Impact Framework.

Other results of implemented framework states as: through focus on equity and inclusiveness. Only addressing structural obstacles to achieve coherence and integration in planning and implementation within our system ensures the just energy transition. Mentioned before SDGs can build the global potential for the energy transition through integrating inclusive monitoring scheme and uniting all parties to impact the transformational potential.

1.3.2. Energy security

Energy security is defined by the International Energy Agency as reliable, affordable access to all fuels and energy sources.

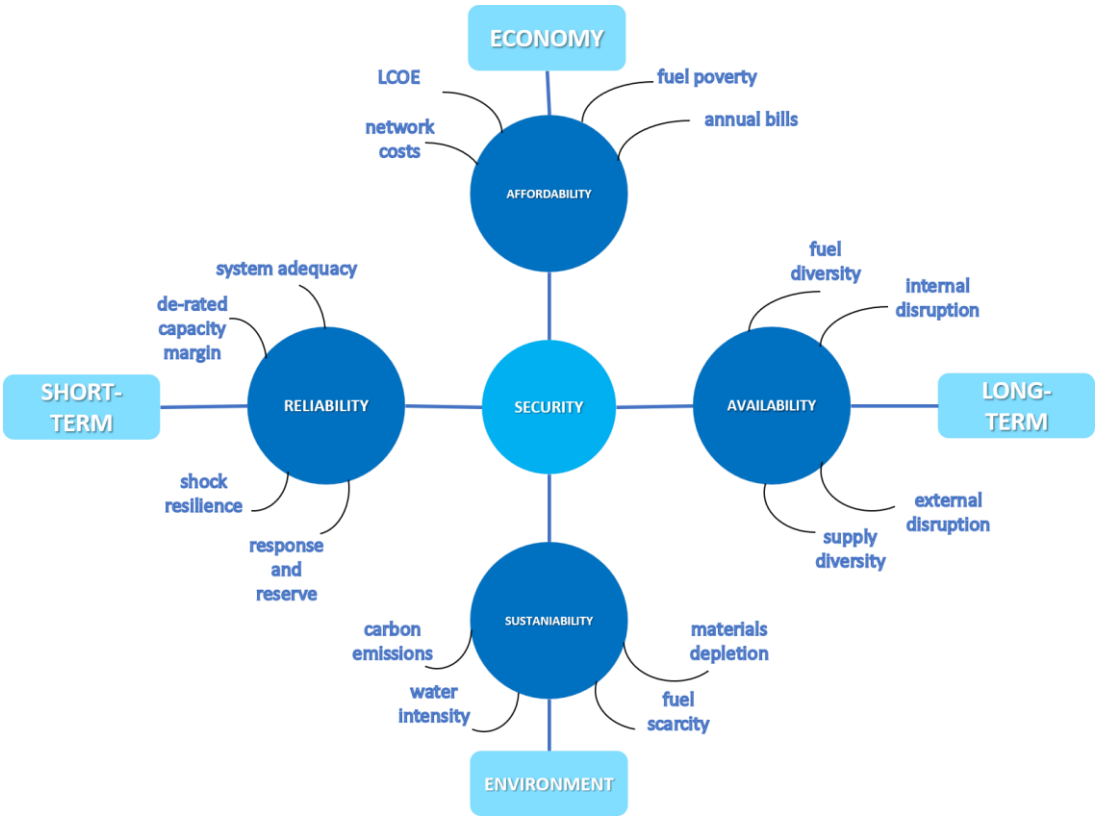

Figure 4. Framework for the assessment of low carbon energy security. Source: Jones, O, Dodds, P, 2017, Definitions of energy security.

To ensure energy security within its regions EU states for diversification of energy supply sources and routes to establish secure and affordable energy supplies. This entails finding and constructing new paths that reduce the reliance of European countries on an energy carriers supply and other energy resource provider, integrating energy markets and infrastructures, establishing common certification processes so the outside interferences can be minimized. EU Member States have to undergo specific obligations regarding filling facilities and storage requirements for energy carries, preventive models to possible accidents of the energy infrastructure.

What is more, energy security not only requires adequate protection of critical infrastructure of energy carriers, but also against cyberattacks due to the development of the digital system closely connected to the traditional energy system to ensure the safeness of energy supply and consumer data (cybersecurity in the energy sector).

Energy security, in light of horrific events related to the Ukrainian War while the Ukrainian energy supply being attacked and disrupted, and in a consequence leading to the global energy market disruptions, becomes an extremely pressing issue. It is inevitable that one of the solutions for ensuring energy security within EU countries is developing RES share in energy mix and coinstantaneous fossil-fuel energy carriers consumption reduction, as well. What is more, energy security not only requires adequate protection of critical infrastructure of energy carriers, but also against cyberattacks due to the development of the digital system closely connected to the traditional energy system to ensure the

safeness of energy supply and consumer data (cybersecurity in the energy sector).

1.3.3. Energy poverty

Energy poverty refers to a circumstance in which households are unable to access essential energy services and products. In this situation the specific indicators can be taken into consideration, such as: too high energy prices, low household income and poor energy-efficient buildings and appliances and more. The EU is committed to reducing and tackling energy poverty and to the protection of vulnerable groups.

According to the EUROSTAT 9.3% of the EU population (41 million people) were unable to keep the indoor temperature in their homes at the suitable level in 2022.

Some of the EU State Members adopted their own definition of energy poverty tailored to their own circumstances and needs, however they are not uniformed and comparable in regards of the same indicators to be monitored. On this account, it is even more important to accentuate the necessity of describing the full picture of this issue within the whole Europe to ensure the just energy transition.

The EU expertise body in terms of energy poverty is Energy Poverty Advisory Hub (EPAH) that supports local government entities and collaborating stakeholders in conducting an in-depth analysis of the issue of energy poverty within their respective regions. EPAH, through the local coordinators, also assists in the development of local strategies that will effectively mitigate this problem, with the ultimate goal of combating it and promoting just transition across various regions within the EU.

From the beginning of 2025 Energy Poverty becomes an obligatory pillar of SECAP (Sustainable Energy and Climate Plan) established within the European initiative – Covenant of Mayors. Addressing measures tackling energy poverty at the local level is even more pressuring in terms of the fact that according to the 20th principle of the European Pillar of Social Rights the access to the good quality crucial services, like water, sanitation, energy, transport, financial services and digital communication.

1.3.4. Addressing climate change

A division between actions combating climate issues and energy issues is a nonsense. Coping with the burning issue of climate change in a separate framework without energy transition make no more sense in 2023. Fossil fuel consumption and in a consequence the emission generation is the first cause of the climate crisis resulting in long-term shifts in temperatures and weather patterns in the global scale. All the implemented solutions has to be climate-neutral and, what is more – elevating the adaptation options.

To address climate change from the regional and local perspective the regional and local authorities should take on the role of influencing the

development and implementation process of sustainable energy and climate policies within their countries and regions. The Bottom-up approach seems to be crucial due to the fact that working for a common goal of carbon-neutrality by the united actions to implement the climate mitigation and adaptation measures unites all the interests. The policies and financing supporting climate change mitigation and just energy transition are enabling the green change.

2. Regional ECAP summary

(Summary of the regional ECAP+ that will be also translated into English – see T3.3.5 and D3.2 in GA)

3. Vision

3.1. Regional vision in regards of ECAP+ targets and existing plans

(Summary of the regional vision enclosing concrete statement, giving targets and timeframe that include aims towards just transition, participation and involvement of community and stakeholders.)

4. State of art

4.1. Situation on the European and National Level

(EU goals for 2050 and 2030 – financial part refers to the input from WP5 – the finance option document for the ECAP+ will be created to be referred to; National level strategies and policies and legislation regarding energy transition and energy planning such as National Energy and Climate Plans, Recovery and Resilience Plans etc.)

With a number of programs and strategies that address the goals and needs of just transition and climate change, the EU responds to the current situation in its area. The most adequate ones are mentioned below.

European Green Deal is a EU strategy leading for fair and just transition for each of 27 EU State Members to ensure modern, resource-efficient and competitive economy and society. Its objectives are:

- An economy with no net emissions of Green House Gases by 2050,
- Europe as a first climate neutral continent by 2050,
- Economic growth separated from the resource utilization,
- No one and no place left behind,
- Emission reduction by at least 55% by 2030 (from 1990 levels).

Additionally it states for: the Increase of energy efficiency and renewable energy, Europe as a first climate neutral continent by 2050.

European Green Deal initiatives:
the Renovation Wave,
the transposition of the Clean Energy Package into national laws,
the national Long-Term Renovation Strategies,
the Horizon Europe mission on climate-neutral and smart cities.

Fit for 55 is a strategy of legislative proposals aimed to enabling targeted reduction of GHG emissions by at least 55% by 2030 and achieve Europe's

climate neutrality by 2050. The package covers a range of policy areas, including energy efficiency, renewable energy sources, land use, energy taxation, and joint reduction effort and emissions trading. The document also assumes increasing RES energy production to 40% by 2030.

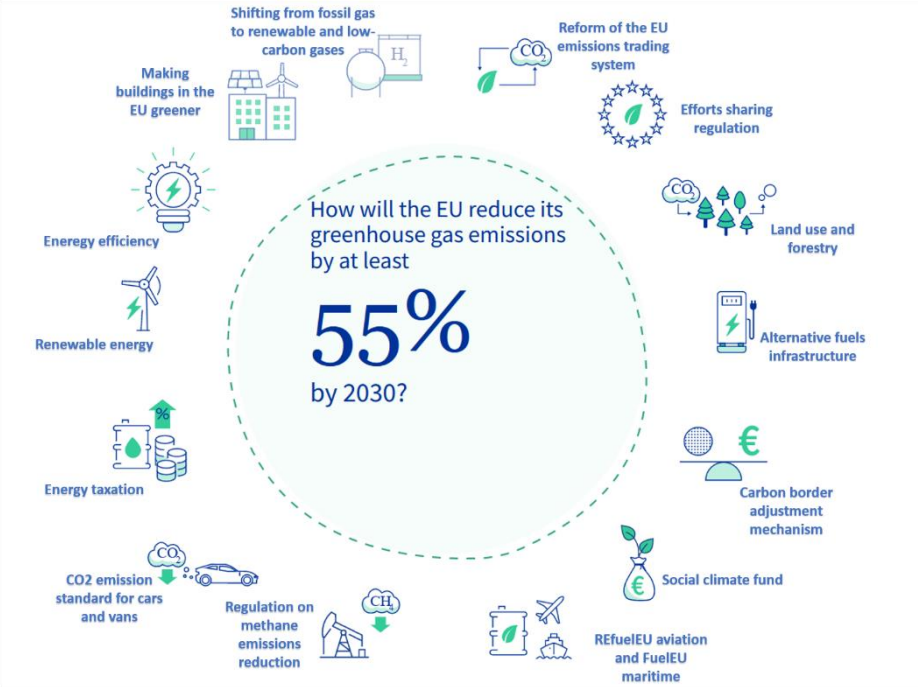

Figure 5. The 55 package framework objectives. Own compilation based on the source: https://www.consilium.europa.eu/en/policies/green-deal/fit-for-55-the-eu-plan-for-a-green-transition/

European Climate Pact is an initiative to encourage citizens, communities and organizations to participate in climate action and build a greener Europe.

The Clean Energy for all Europeans Package aims to direct the a clean energy transition all over European Union Member States within a framework of the European energy policy. Its targets state: at least 40% cuts in GHG emissions (from 1990 levels), at least 32% share for RES energy, at least 32.5% improvement in energy efficiency.

Social Climate Fund establishes the range of climate actions and social compensation measures that will be funded by the EU for all Member States within the framework of their national Social Climate Plans to support investments for the most vulnerable groups and reduce emissions.

4.2. Regional authority

4.2.1. Description

(organizational structure, political power, territorial / administrative division)

4.2.2. Role and scope of the authority

4.3. Overview of existing plans

(existing plans in the region and their short description and summary)

4.3.1. Just transition in existing plans

(definition of the just transition if exists within the existing plans presented on the regional or national level.)

4.4. Regional Profile

(Characteristics of the region – in a reference to T2.1.4 in GA)

4.4.1. Demography

(population trends, age structure, migration and employment patterns)

4.4.2. State of regional infrastructure and buildings

(transportation, industrial, utilities)

4.4.3. Business environment

(relevant sectors, profitability, trends, Gross domestic product - GDP)

4.4.4. Geography

(Characteristics of the territory, description of the geographical location and conformation of the regional territory, land type/use, conditions.)

4.4.4.1. Regional climate situation

4.4.4.1.1. Annual overview

(solar and wind activity, temperature, precipitation)

4.4.4.1.2. Extreme weather and climate events

Describe the most severe extreme weather and climate events that happened in the region and the most current ones (floods, droughts, rainstorms, windstorms, Urban heat islands, heat waves, ice, cold temperatures etc.)

4.4.5. Political environment

(levels of government, political parties, political trends, efficacy and effectiveness of communication among Multi-Level Government entities – MLG Governance)

4.5. State of energy in the region

(includes electricity, heating/cooling needs, fossil fuel and renewable energy consumption/production across multiple sectors including buildings, transport, industry, agriculture and waste management)

4.5.1. Energy sources

4.5.1.1. Natural resources in the region

(Indication of principal primary energy resources available in the territory and exploitable for energy production)

4.5.1.2. Non-renewable Energy Sources

(Availability and yearly data about natural gas resources, oil, coal and nuclear energy. Indications about their consumption/production)

4.5.1.3. Renewable Energy Sources

(Availability and yearly data for RES, geothermal resources, rivers suitable for hydroelectric production, bio-waste quantity. Characteristic of the resources for their availability – if needed refer to the paragraph 4.4.4.1. Regional climate situation)

4.5.2. Energy consumption

(energy consumption level, if available, based on industrial consumption, transport sector, public building and services, heating/cooling, fossil fuels or renewable consumption)

4.5.3. Energy infrastructure

(Values regarding efficiency of gas distribution, data about energy production divided by source, energy carriers, electricity distribution, lighting system and eventual blackouts)

4.6. Potential of the region

(Possible directions of improvement within the sectors mentioned below for BAU and "green transition" visions)

4.6.1. Infrastructures improvement
4.6.2. Buildings energy efficiency improvement
4.6.3. Potential economic growth
4.6.4. Renewable energy potential
4.6.5. Digitalization of energy system potential
4.6.6. Adaptation planning for climate disruption

5. BEI (Baseline Emissions Inventory) analysis

(This includes electricity, heating/cooling needs, fossil fuel and renewable energy consumption/production, emissions of CO2 across multiple sectors, e.g. buildings, transport, agriculture, industry and waste management)

5.1. Inventory year
5.2. Number of inhabitants in the inventory year
5.3. Emission factors approach

(standard or LCA)

5.4. Emission reporting unit

(CO2 or equivalent measure, for evaluation of emission in electricity, heating/cooling, fossil fuel and renewable energy consumption/production across transport, building, waste management and if relevant sectors)

5.5. BEI results in terms of final energy consumption and emissions
5.6. Energy projections until 2030

6. Risk & vulnerability assessment (RVA)

6.1. Expected extreme climate events at regional/local level
6.2. Estimated impact of extreme events for activities and infrastructures
6.3. Groups at risk because of the impact of events

(on the scale: 1-10, where 10 = most-at-risk)

7. Regional energy security

7.1. Strategies and policy

7.1.1. National level
7.1.2. Regional level

7.2. Actual status of energy supply

(Energy supply diversification)

7.3. Critical infrastructure and cybersecurity

(state of the Critical infrastructure in the region)

7.3.1. Actual status of cybersecurity level of infrastructure

7.3.2. Existing plan for cybersecurity improvement

7.4. Vulnerability to physical attack/hardening of energy infrastructure

(in a reference to the Ukrainian War and their energy supply being attacked and disrupted)

8. Energy poverty

8.1. Energy poverty description

8.1.1. Energy poverty definition

(Definition of the energy poverty, if considered in the existing plans presented in regional/national level.)

8.2. Energy poverty indicators

8.2.1. Vulnerable groups indicators

(people unable to keep proper home sufficiently warm, excess winter mortality, people living in bad state buildings, people at risk of poverty or social exclusion – borderline and energy poor households, excess summer heat morbidity and mortality etc.)

8.2.2. Structural indicators

(Dwelling comfortably cool during summer, dwelling comfortably warm during winter)

8.2.3. Cost indicators

(Costs covered by households in the energy poverty situation, Energy prices to be considered - electricity prices, fossil fuels etc.)

8.3. Preventive actions

8.4. Mitigation actions

8.5. Trainings

9. Just Energy Transition and mitigation measures

(If necessary, refer to paragraph 2.3. Aims towards just energy transition)

9.1. Mitigation measures for reduction of GHG emissions

9.2. Other assessment and adaptation options

(Strategies in case of extreme events that do not collide with the mitigation actions)

9.3. Existing solutions for marginalized groups

9.4. Legislation/policy on RES and energy efficiency

(National or regional level)

9.5. Involvement of stakeholders and citizens

(engaged stakeholders, activities, identified priorities of the stakeholder groups, ways of implementing the stakeholders interests within the ECAP+ development process)

9.5.1. Legislative authority

(Staff capacity allocated)

9.5.2. Citizens participation
9.5.3. Local business
9.5.4. Vulnerable groups
9.5.5. Other groups

(if present)

10. Financial assessment

10.1. Financial instruments and opportunities

(refer to the WP5 inputs)

10.2. Regional Sustainability Plans

(preferably refer to WP5 inputs about financial strategies, climate budgeting and regional financial sustainability plans etc.)

10.3. Actions and measures on energy prices

10.3.1. energy taxation

(general situation)

10.3.2. feed-in tariffs for energy communities

(if exist)

11. Implementation

11.1. Implementation process
11.2. Coordination and organizational structures

(created/assigned)

12. Monitoring

12.1. Monitoring of CO2 emissions

(preferably CO_2 and CO_2eq)

12.2. Monitoring of energy poverty status at regional/local level

(general monitoring if exists, monitoring of mitigation or adaptation measures that indicates or influence the energy poverty situation within the region)

12.3. Monitoring Tools

13. Bibliography

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